

Oef 1 (c) p A. 14

$$f_3(x) = (x + e^x)^{\frac{1}{x}} \quad \text{in } +\infty$$

$$\lim_{x \rightarrow +\infty} (x + e^x)^{\frac{1}{x}} \quad +\infty^0 = \text{ONB}$$

$$\frac{1}{x} \ln(x + e^x) \quad 0 \cdot +\infty = \text{ONB}$$

$$= \lim_{x \rightarrow +\infty} e^{\frac{1}{x} \ln(x + e^x)} \quad \frac{+\infty}{+\infty} \rightarrow (H)$$

$$= \lim_{x \rightarrow +\infty} e$$

$$\begin{aligned} & \stackrel{H}{=} e^{\lim_{x \rightarrow +\infty} \frac{1}{x + e^x} \cdot (1 + e^x)} \\ & = e^{\lim_{x \rightarrow +\infty} \frac{1 + e^x}{x + e^x}} \quad \frac{+\infty}{+\infty} \rightarrow (H) \\ & \stackrel{H}{=} e^{\lim_{x \rightarrow +\infty} \frac{e^x}{1 + e^x}} \quad \frac{+\infty}{+\infty} \\ & \stackrel{H}{=} e^{\lim_{x \rightarrow +\infty} \frac{e^x}{e^x}} = e^2 \end{aligned}$$

op $+\infty$ HA: $y = e^x$